



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/709,886	06/03/2004	John Charles Intile	146585-1	3885
23413	7590	07/26/2005	EXAMINER	
CANTOR COLBURN, LLP 55 GRIFFIN ROAD SOUTH BLOOMFIELD, CT 06002			RODRIGUEZ, WILLIAM H	
			ART UNIT	PAPER NUMBER
			3746	

DATE MAILED: 07/26/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/709,886

Applicant(s)

INTILE ET AL.

Examiner

William H. Rodriguez

Art Unit

3746

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 July 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-19 is/are allowed.
- 6) ☒ Claim(s) 20, 21 and 25 is/are rejected.
- 7) ☒ Claim(s) 22-24 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 6/3/04; 7/5/05 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

DETAILED ACTION

This office action is in response to the amendment and remarks filed 7/5/05. Since the examiner has applied new grounds of rejection, this office action is being made non-final to afford the applicant the opportunity to respond to the new grounds of rejection.

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, “*the raised ribs of substantially round or oval shape extending from the outer surface of the combustion liner (claim 21)*” must be shown or the feature(s) canceled from the claim(s). No new matter should be entered. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Art Unit: 3746

2. The drawings (Figure 8) are objected to as failing to comply with 37 CFR 1.84(p)(4) because *different reference characters "128" and "122" have both been used to designate a same element*. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

3. The drawings (Figure 3) are objected to as failing to comply with 37 CFR 1.84(p)(4) because *reference character "112" has been used to designate both "an aft end of the combustion liner" and "a transition region"*. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Art Unit: 3746

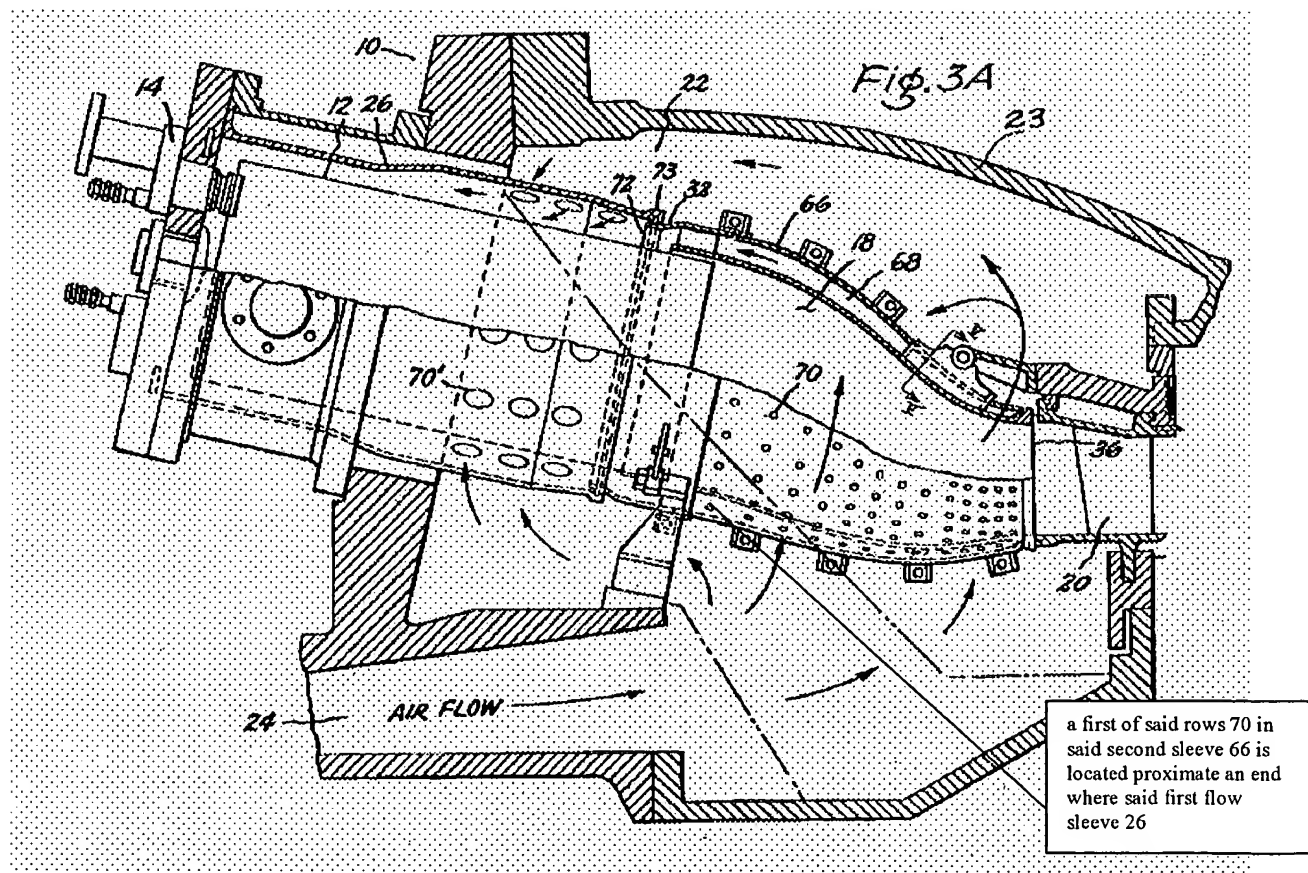
Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claim 20 is rejected under 35 U.S.C. 102(b) as being anticipated by Davis et al. (US 4,719,748).



Davis teaches a combustor liner of a gas turbine combustor, said combustor liner having a substantially circular cross-section, and a first flow sleeve 26 surrounding said liner in substantially concentric relationship therewith creating a first flow annulus therebetween for

Art Unit: 3746

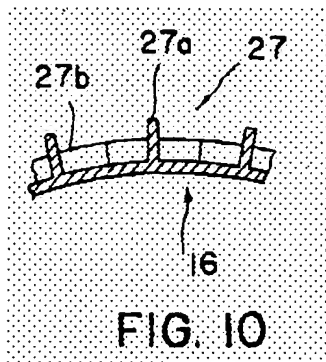
feeding air to the gas turbine combustor, and wherein a transition piece 18 is connected to said combustor liner, with the transition piece surrounded by a second flow sleeve 66, thereby creating a second flow annulus in communication with said first flow annulus, a plurality of axially spaced rows of cooling holes (70', 70) in said flow sleeves, each row extending circumferentially around said flow sleeves, a first of said rows 70 in said second sleeve 66 is located proximate an end where said first flow sleeve 26 and said second flow sleeve 66 interface, wherein cooling air is supplied to said cooling holes (70, 70'). Since **Davis** has the same structure as claimed, it is inherent that **Davis's** device would be able to perform the recited method steps. See particularly **Figure 3a** of **Davis** above.

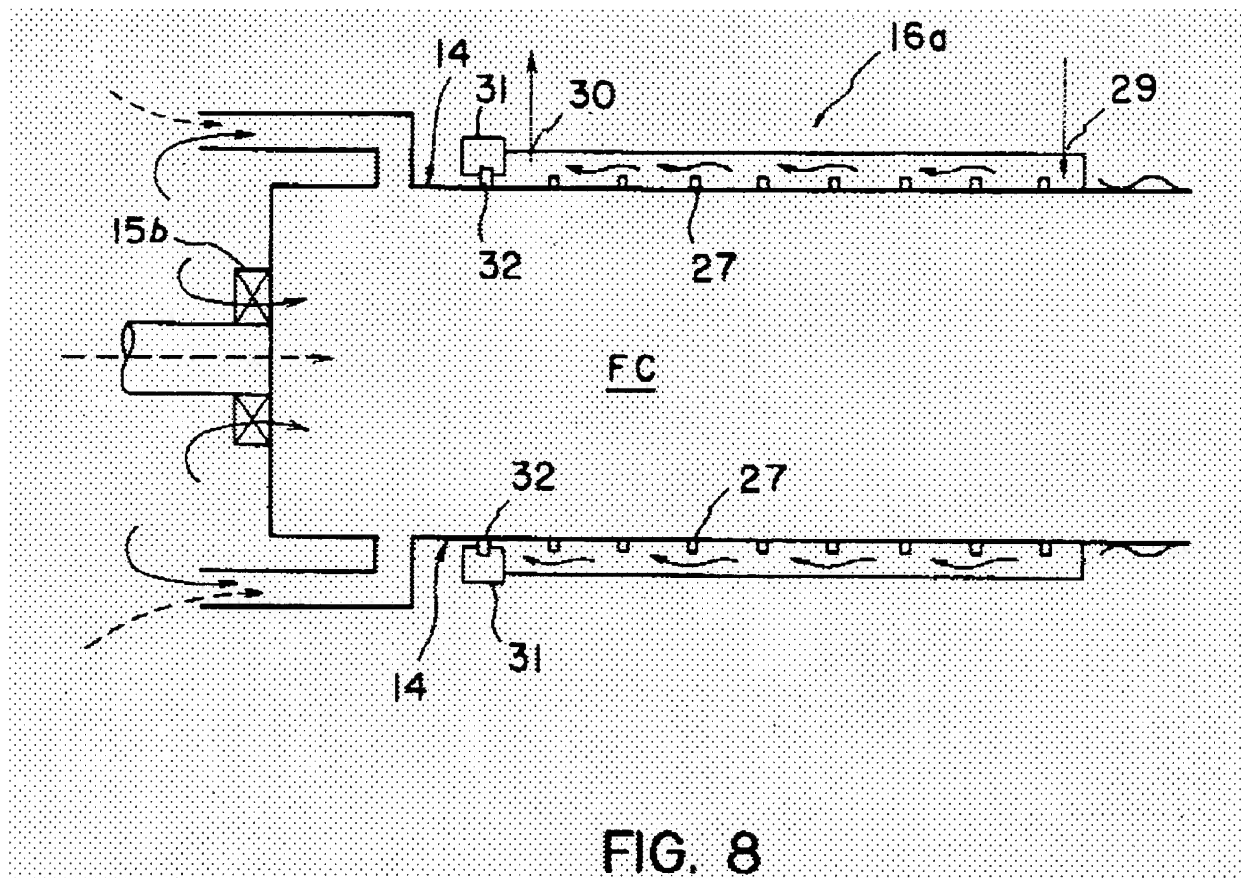
Claim Rejections - 35 USC § 103

6. The following is a quotation of '35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Davis et al.** (US 4,719,748) in view of **Maeda** (US 5,802,841).





Figures 8 & 10 of Maeda

Davis does not teach a plurality of discrete ring turbulators arranged in spaced relationship on said outer surface of said combustor liner. However, Maeda teaches a combustor liner having plurality of discrete ring turbulators 27 arranged in spaced relationship on said outer surface of said combustor liner, wherein said turbulators serve to disrupt the flow on the liner surface in a manner that enhances heat transfer, thus improving the cooling performance of the combustor liner and increasing its operating life (column 9 lines 45-59 of Maeda). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have provided Davis combustion liner with Maeda's turbulators in order

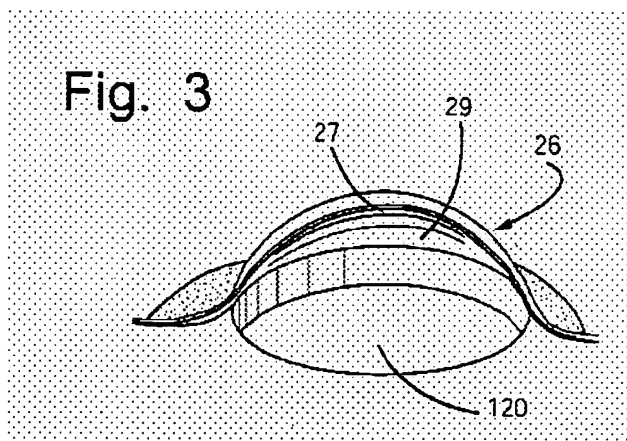
Art Unit: 3746

to effectively cool the combustor liner by enhancing heat extraction through disruption of the flow on the liner surface and increase its operating life. See particularly **Figures 8 and 10** of **Maeda**.

Since **Davis** in view of **Maeda** has the same structure as claimed, it is inherent that **Davis-Maeda's** device would be able to perform the recited method steps.

Note: US 6,681,578 and US 6,134,877 references can also be combined with **Davis** to reject claim 21 under 35 U.S.C. 103(a).

8. Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Davis et al.** (US 4,719,748) in view of **Bland** (US 6,494,044).



Davis does not teach that the combustor liner includes a plurality of flow catcher devices. However, **Bland** teaches a combustor liner that comprises a plurality of catcher devices 26 that catch air that would previously have passed the impingement cooling holes due to lack of static pressure differential to drive the flow through them, and directs the flow inward onto the hot surfaces, thus reducing the metal temperature to acceptable levels. Further, **Bland** teaches that

Art Unit: 3746

this catcher devices 26 can be fitted into any existing combustor liner in order to provide additional cooling to the liner (see column 3 line 63 to column 4 line 12. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have provided Davis' combustor with Bland's catcher devices in order to direct compressor discharge air onto surfaces requiring additional cooling, thus improving the cooling performance of the combustor liner and increasing its operating life. See particularly **Figures 2, 3** of Bland.

Allowable Subject Matter

9. Claims 1-19 are allowed.

10. The indicated allowability of claims 20, 21 and 25 is withdrawn in view of the reference(s) to **Davis et al. (US 4,719,748); Maeda (US 5,802,841); and Bland (US 6,494,044)**. See rejections above.

11. Claims 22-24 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

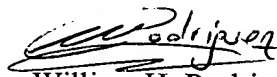
Contact information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William H. Rodriguez whose telephone number is 571-272-4831. The examiner can normally be reached on Monday-Friday 7:30 am to 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy S. Thorpe can be reached on 571-272-4444. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 3746

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

 7/21/05
William H. Rodriguez
Examiner
Art Unit 3746